INTRODUCTION TO REMBASS

SUBCOURSE NUMBER IT0510

EDITION A

United States Army Intelligence Center
Fort Huachuca, Arizona 85613-6000

3 Credit Hours

Edition Date: June 1992

SUBCOURSE OVERVIEW

This subcourse is designed to teach you the general aspects of the remotely monitored battlefield sensor system (REMBASS) system. Contained in this subcourse is instruction on the concept, management, capabilities, and limitations of the REMBASS system. There is also instruction on the different pieces of REMBASS equipment.

There are no prerequisites for this subcourse.

This subcourse reflects the doctrine which was current at the time the subcourse was prepared.

The words "he", "him", "his", and "men", when used in this publication, represent both the masculine and feminine genders unless otherwise stated.

TERMINAL LEARNING OBJECTIVE

ACTION:	You will describe the concept, management, capabilities, and limitations of the REMBASS system. You will also identify the characteristics of the different pieces of REMBASS equipment.
CONDITIONS:	You will be given narrative information and illustrations from FM 34-10-1.
STANDARDS:	You will identify the concept, management, capabilities, and limitations of REMBASS and the identify the characteristics of the different pieces of REMBASS equipment as described in FM 34-10-1.

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LESSON 1

REMBASS CONCEPT, MANAGEMENT, CAPABILITIES AND LIMITATIONS

OVERVIEW

TASK DESCRIPTION:

In this lesson you will learn the concept, management, capabilities and limitations of the REMBASS system.

LEARNING OBJECTIVE:

ACTIONS:	Describe the concept, management, capabilities and limitations of the REMBASS system.
CONDITIONS:	You will be given narrative information and illustrations from FM 34-10-1.
STANDARDS:	Describe the concept, management, capabilities, and limitations of the REMBASS system.
REFERENCES:	The material contained in this lesson was derived from the following publications: FM 34-10-1 TM 11-6350-219-13

INTRODUCTION

Armies that concentrate superior combat power at decisive times and places win battles. While there are no simple solutions to winning, there are certain key factors for success on the modern AirLand Battlefield. One factor is the support provided to the combined arms team through the Remotely Monitored Battlefield Sensor System (REMBASS).

In a tactical environment, REMBASS provides the airborne, air assault and light divisions, separate brigades, and armored calvary regiments (ACRs) with a situation and target development capability. This capability is necessary for the timely allocation of resources and combat power. With REMBASS, commanders have the capability to detect enemy forces and their exact location in real-time.

PART A - CONCEPT

REMBASS is integrated into the overall battlefield reconnaissance, surveillance, and target acquisition (RSTA) plans at each echelon. In turn, each RSTA plan is incorporated into the entire intelligence

network, thereby using its full value along with other information gathering methods. In this manner, information from multiple sources can be checked to provide rapid and reliable analysis to confirm an enemy's presence or detect intrusions.

Once the information has been, confirmed and its urgency established the commander may act on it immediately. The information is passed as target acquisition data and, at the same time, passed on to higher, lower and adjacent echelons. While this may seem lengthy and time consuming, the time from the first detection, through confirmation, to reaction, is only a matter of minutes.

There are other situations which need a system to detect and classify movement of personnel and equipment. The equipment can come from the rear area or security zones as well as depots, storage facilities, airports, demilitarized zones, and other restricted areas.

The REMBASS system is organic to airborne, air assault and light divisions, separate brigades and ACRs (see Figure 1-1). Personnel from assigned military intelligence (MI) units provide maintenance support to the system. REMBASS supports offensive, defensive, rear areas, special operations such as military operations on urban terrain (MOUT), rear security, and border surveillance.

Operationally, REMBASS can remain under division control in general support (GS). It can also be attached in direct support (DS) to division support headquarters, maneuver brigades and battalions, and ACRs.

The system is tasked by the division collection management and dissemination (CM&D) section. REMBASS teams report directly to the Intelligence Officer (S2) of the supported unit. The S2 plans the sensor employment with the assistance of the ground surveillance systems (GSS) team leader. The intelligence preparation of the battlefield (IPB) requirements guide REMBASS planning and employment.

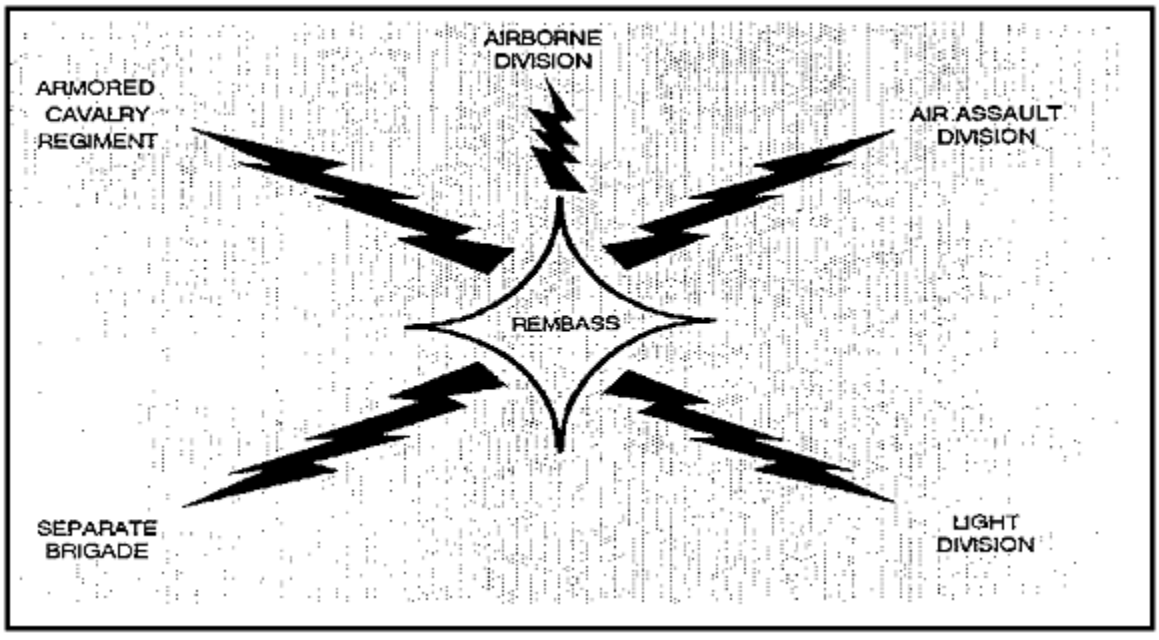

Figure 1-1. Units that use REMBASS.

The sensor monitoring set (SMS) serves as the sensor output display and provides target identification and classification data. In most cases the SMS is located at the supported unit's tactical operations center (TOC).

Trained REMBASS personnel come from the MI battalion (division) and the MI company (separate brigades and ACRs) to deploy and monitor sensors and repeaters. Specialized training is required to effectively employ the system and analyze sensor data. REMBASS supported units are not required to provide personnel to operate the monitoring device, however; they may be required to provide security for the implanting team.

PART B - MANAGEMENT

The command is responsible for REMBASS management and general employment guidance. REMBASS must provide timely and accurate information at each echelon where combat forces move to take full advantage of the information. Because of its flexibility, REMBASS is employed by units from battalions to divisions.

Coordinating REMBASS operations is normally accomplished by the CM&D section at each command as part of their overall surveillance plan. A trained GSS (96R) noncommissioned officer (NCO) assists and advises on the technical aspects and employment of REMBASS. At brigade and battalion, close coordination is needed between the commander, S2, operations and training officer (S3), fire direction center (FDC) officer, and the GSS NCO to get the maximum benefit from REMBASS operations.

Possible sensor locations are determined by a study of the terrain, the enemy's past movements, and their suspected course of action. The decision process for employment normally begins at the lowest level, consistent with the requirement for centralized control. This reduces reaction time and permits screening of REMBASS information into the intelligence system.

A request for REMBASS support by subordinate units is forwarded from the battalion S2 to the brigade S2, who checks for duplication of effort and determines if the request meets the brigade's own requirements. The brigade S2 then submits the request through the division tactical surveillance officer (TSO) to the division CM&D, who will check it for division requirements. If confirmed, the division CM&D tasks the MI battalion, which then tasks the intelligence and surveillance (I&S) company. This is the normal process, but is subject to change based on unit structure in the intelligence chain.

A secure communication capability is critical because of the type and amount of traffic that a surveillance network generates. A secure communication system must be established to support the surveillance platoon in order to reduce the reaction time between detection and response. The support organization provides for a communication network organic to the platoon. The surveillance platoon network is tied into the intelligence communication network and automatically disseminates the information gained from REMBASS to stations monitoring the net.

Field wire communication is used with the TOC or FDC located within the immediate locale. This provides a fairly secure communication system while reducing radio traffic. Unsecure communications from the monitoring sites can compromise the intentions of friendly forces. Additionally, poor

communication security (COMSEC) could provide the enemy with insight into our knowledge of their locations and actions, enabling them to take countermeasures.

Frequency control and management are command responsibilities which are discharged at theater or equivalent staff level. In addition, each major command (MACOM) organization (for example, division headquarters) that employs REMBASS must regulate and control the channels and identification (ID) codes used by each subordinate unit. Adjacent units within a command must not communicate on the same channel or use similar ID codes within the same battlefield area. Poor frequency management and control decreases the system's effectiveness and may render it useless. Centralized control is vital to restrict and manage limited equipment and to ensure maximum use.

PART C - CAPABILITIES

REMBASS provides a real-time detection capability. Sensors are portable, movement activated, and data transmitting. REMBASS provides surveillance in near all-weather and terrain, day, offensive, defensive, rear area, or special operations environment. Employed sensors are activated by magnetic, seismic, acoustic, or infrared (temperature) changes. This disturbance or movement is transmitted to a repeater or monitoring site. The sensors are passive in that they will only transmit when they detect movement/disturbances. The transmission is digitally encoded and sent in a micro-burst. Operators analyze the data and report information on--

- Target type.
- Target direction.
- Target location.
- Approximate number of targets.
- Length of column (FLOC).
- Target speed.

REMBASS sensors and repeaters can transmit 15 kilometers ground-to-ground or 100 kilometers ground-to-air. Because the transmission is micro-bursted, REMBASS transmissions are extremely difficult to locate with direction finding (DF) equipment. Because of the flexibility of the equipment and range of applications, various REMBASS equipment (see Figure 1-2) combinations can be selected to suit any mission. REMBASS equipment will be further discussed in lesson two.

PART D - LIMITATIONS

REMBASS does have limitations. The sensors and repeaters must be emplaced by hand. This increases response time to employ the system, and in hostile areas, exposes the implant team. The equipment requires radio line of sight (RLOS) to transmit data to the monitoring site. The equipment size and weight may limit the amount and distance it may be carried for emplacement (This is especially true for man-packing). Operator proficiency greatly affects the results. REMBASS cannot discriminate between friendly, enemy or indigenous personnel or vehicles.

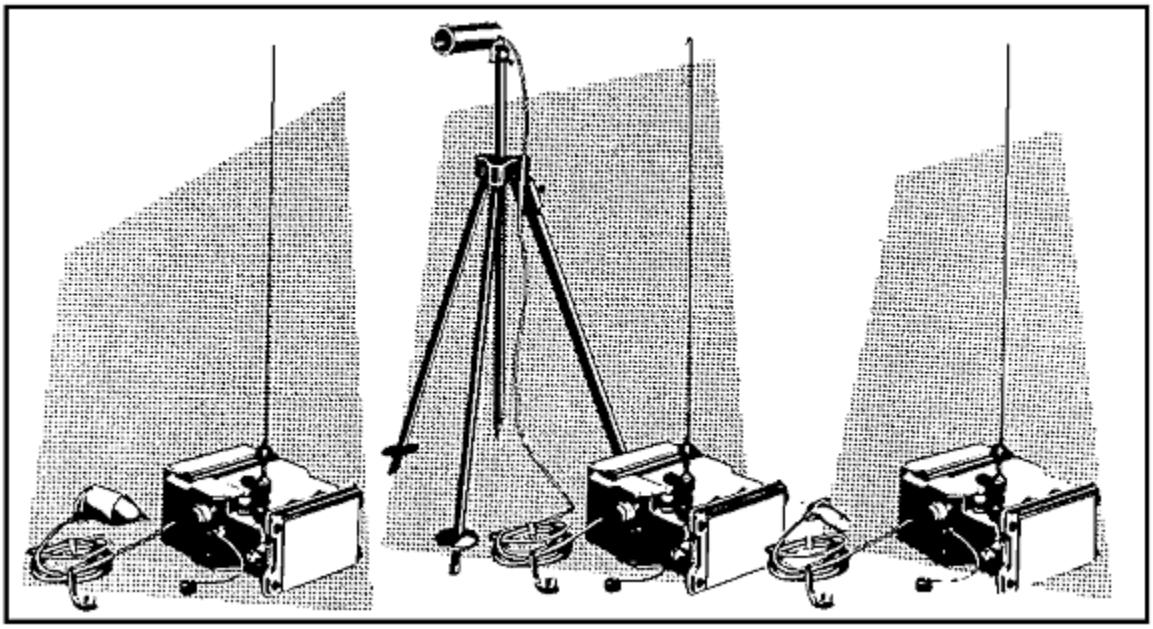

Figure 1-2. REMBASS Sensors.

Lesson 1

Practice Exercise

Instructions The following items will test your understanding of the material covered in this lesson. There is only one correct answer for each item. When you have completed the exercise, check your answers with the answer key that follows. If you answer any item incorrectly, review that part of the lesson which contains the portion involved.

1. What may the supported unit be required to provide the REMBASS team?

   - ○ A. Personnel to monitor the SMS.
   - ○ B. Security element.
   - ○ C. Vehicle support.
   - ○ D. Maintenance support.

2. Who initiates a REMBASS support request?

   - ○ A. The battalion S2.
   - ○ B. The brigade S2.
   - ○ C. The division CM&D section.
   - ○ D. The MI battalion.

3. What type of communication does a REMBASS team use within the TOC area?

   - ○ A. Field wire communications.
   - ○ B. Secure voice radio.
   - ○ C. Runner system.
   - ○ D. Distribution.

4. REMBASS operators report information on--

   - ○ A. Enemy equipment.
   - ○ B. Target nomenclature.
   - ○ C. Enemy tactics.
   - ○ D. Target type.

Practice Exercise
Answer Key and Feedback

1. What may the supported unit be required to provide the REMBASS team?

    A. Personnel to monitor the SMS.

    B. Security element.

    C. Vehicle support.

    D. Maintenance support.

2. Who initiates a REMBASS support request?

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    C. The division CM&D section.

    D. The MI battalion.

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    D. Distribution.

4. REMBASS operators report information on--

    A. Enemy equipment.

    B. Target nomenclature.

    C. Enemy tactics.

    D. Target type.

LESSON 2

REMBASS EQUIPMENT

OVERVIEW

TASK DESCRIPTION:

In this lesson you will learn the basic characteristics of the different pieces of REMBASS equipment.

LEARNING OBJECTIVE:

ACTIONS:	Describe the various pieces of REMBASS equipment and the functions they serve.
CONDITIONS:	You will be given narrative information and illustrations from FM 34-10-1.
STANDARDS:	Describe the functions and characteristics of the different pieces of REMBASS equipment.
REFERENCES:	The material contained in this lesson was derived from the following publications: FM 34-10-1 TM 11-6350-219-13

INTRODUCTION

Upon completion of this lesson, you will be able to describe the various pieces of equipment in the REMBASS system and the functions they serve.

PART A - Sensors

There are three sensors in the REMBASS system. They are the Magnetic sensor (DT-561), the Seismic Acoustic sensor (DT-562), and the Infrared Passive (DT-565).

Each sensor consists of a transducer, transmitter, and battery. There are many similarities between the sensors. The transmitter module, encoder board, battery, antenna, and housing assembly are identical. They use the same standard communication format for data transmission output, and all sensors have a self disabling and anti-tampering feature. In fact, when the transducer is not connected, the only way to tell the sensors apart is by reading the data plate.

The sensors are implanted in strings. A string can be tailored to the threat and terrain. Normally a string consists of one of each type sensor. A string must be arranged so that the target passes within the detection range of each sensor. It takes experience for an operator to know exactly how the string

should be arranged. Strings should be placed at choke points whenever possible to ensure that the targets pass within the detection ranges. High speed avenues of approach and key roads and trails are also good locations for strings. A string implanted without thought of its location, is a waste of equipment, time, and troops.

(1) MAGNETIC SENSOR DT-561/GSQ (See Figure 2-1)

The magnetic (MAG) sensor uses a passive magnetic technique to detect targets, and determine direction. The direction is relative to the transducer (movement from left to right or right to left). The MAG has two identification (ID) codes. If a target is moving left to right the first ID code will be transmitted. If a target is moving right to left the second ID code will be transmitted. The MAG will only detect ferrous metal (iron) that passes within the detection range. The MAG will not classify a target. Only a "detect" (-) will be transmitted with the appropriate sensor ID code. The MAG is used as a count indicator (the number of detections are the approximate number of targets) for vehicles. The MAG is not generally used for counting personnel due to its limited range and the fact that they must be armed.

GENERAL TECHNICAL CHARACTERISTICS

Weight:	Sensor with battery 2.95 kilograms (6.5 pounds)	
Number of channels:	599 (593 usable) excluding 208, 211, 267, 342, 345, 354	
ID codes (each channel):	63 (codes 01 through 63)	
Sensor signal output:	2 Watts nominal	
Frequency range:	138-153 megahertz (MHz)	
Channel spacing:	25 kilohertz (KHz) apart	
Detection ranges:	Personnel Wheeled vehicle Tracked vehicle	3 meters 15 meters 25 meters
Power source:	Battery BA-5598/U	
Battery life:	1,000 activations a day for 30 days	
Reference:	TM 11-6350-220-12	

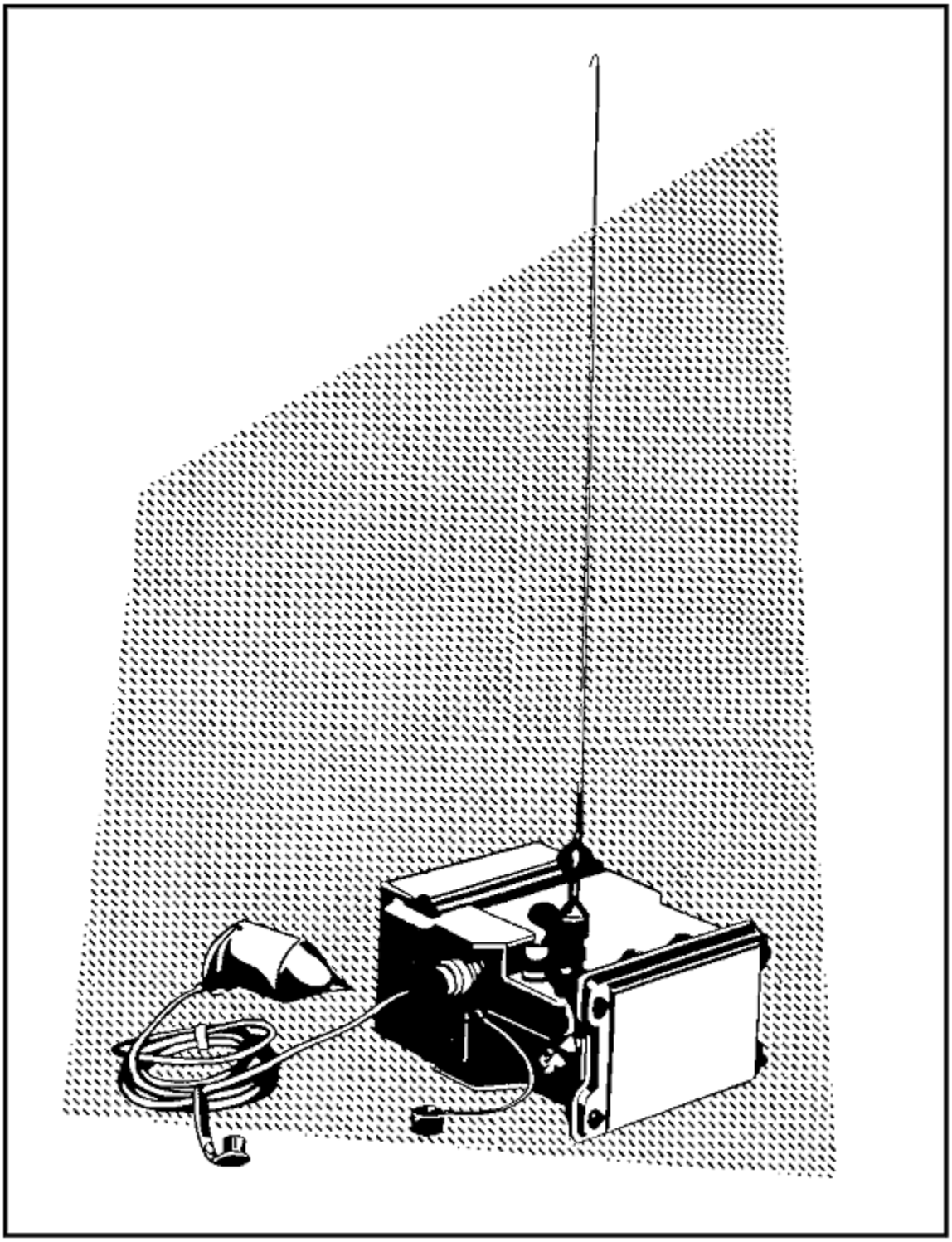

Figure 2-1. Magnetic Sensor DT-561/GSQ.

(2) SEISMIC-ACOUSTIC SENSOR DT-562/GSQ (See Figure 2-2)

The seismic-acoustic (SA) sensor detects and classifies targets. This is the most vital sensor in a string, without it the type of target would be unknown. It will send its ID code plus a P (personnel), W (wheeled vehicle), T (tracked vehicle), V (vehicle, type unknown), or a (-) (detect). The sensor works

by detecting vibrations in the ground and analyzing acoustic signals. The SA will activate every 10 seconds as long as the target is within its detection range. Soil composition affects the detection range of the SA. To help compensate for this, its gain sensitivity can be programmed High, Medium, or Low.

GENERAL TECHNICAL CHARACTERISTICS

Weight:	Sensor with battery 2.95 kilograms (6.5 pounds)	
Number of channels:	599 (593 usable) excluding 208, 211, 267, 342, 345, 354	
ID codes (each channel):	63 (codes 01 through 63)	
Sensor signal output:	2 Watts nominal	
Frequency range:	138-153 megahertz (MHz)	
Channel spacing:	25 kilohertz (KHz) apart	
Detection ranges:	Personnel Wheeled vehicle Tracked vehicle	50 meters 250 meters 350 meters
Power source:	Battery BA-5598/U	
Battery life:	1,000 activations a day for 30 days	
Reference:	TM 11-6350-220-12	

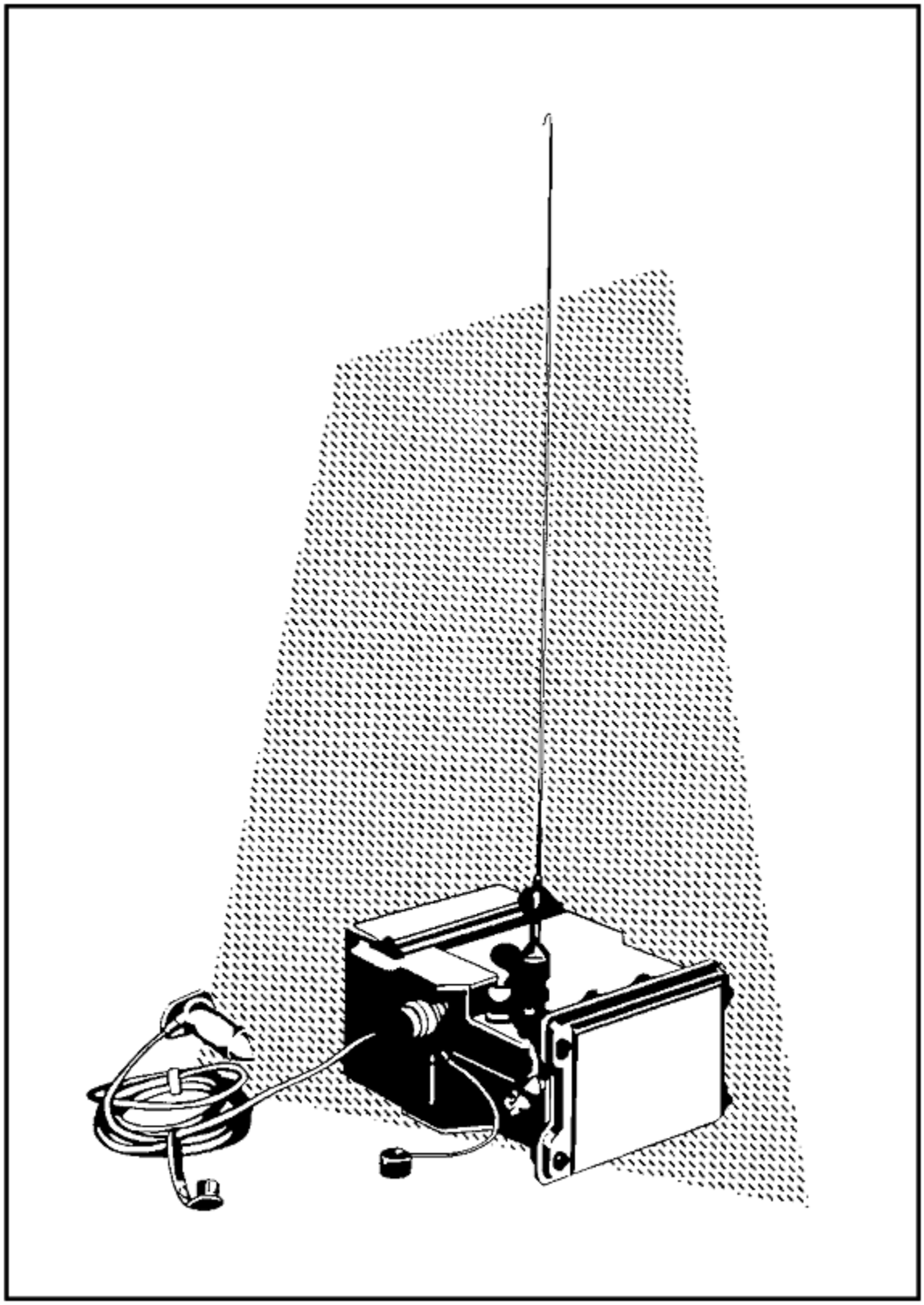

Figure 2-2. Seismic-Acoustic Sensor DT-562/GSQ.

(3) INFRARED PASSIVE SENSOR DT-565/GSQ (See Figure 2-3)

The infrared passive (IP) sensor detects targets by responding to a 1.5 degree Celsius change in ambient temperature. The IP gives direction relative to the transducer (movement from left to right or right to left). The IP has two ID codes. If a target is moving from left to right, the first ID code will be transmitted. If a target is moving from right to left, the second ID code will be transmitted. The IP is a count indicator for personnel (the number of activations is the approximate number of targets). It is generally not used for vehicles because a single vehicle can cause the IP to send multiple activations (it may activate once on the engine compartment, once on the exhaust, and several times on dust trails). The IP cannot classify targets; only a detect (-) will be transmitted. The IP is the only sensor which has the transducer above ground. The IP must have uninterrupted line of sight from the transducer to the target area.

GENERAL TECHNICAL CHARACTERISTICS

Weight:	Sensor with battery 2.95 kilograms (6.5 pounds)	
Number of channels:	599 (593 usable) excluding 208, 211, 267, 342, 345, 354	
ID codes (each channel):	63 (codes 01 through 63)	
Sensor signal output:	2 Watts nominal	
Frequency range:	138-153 megahertz (MHz)	
Channel spacing:	25 kilohertz (KHz) apart	
Detection ranges:	Personnel Vehicles (wheeled and tracked)	3-20 meters 3-50 meters
Power source:	Battery BA-5598/U	
Battery life:	1,000 activations a day for 30 days	
Reference:	TM 11-6350-220-12	

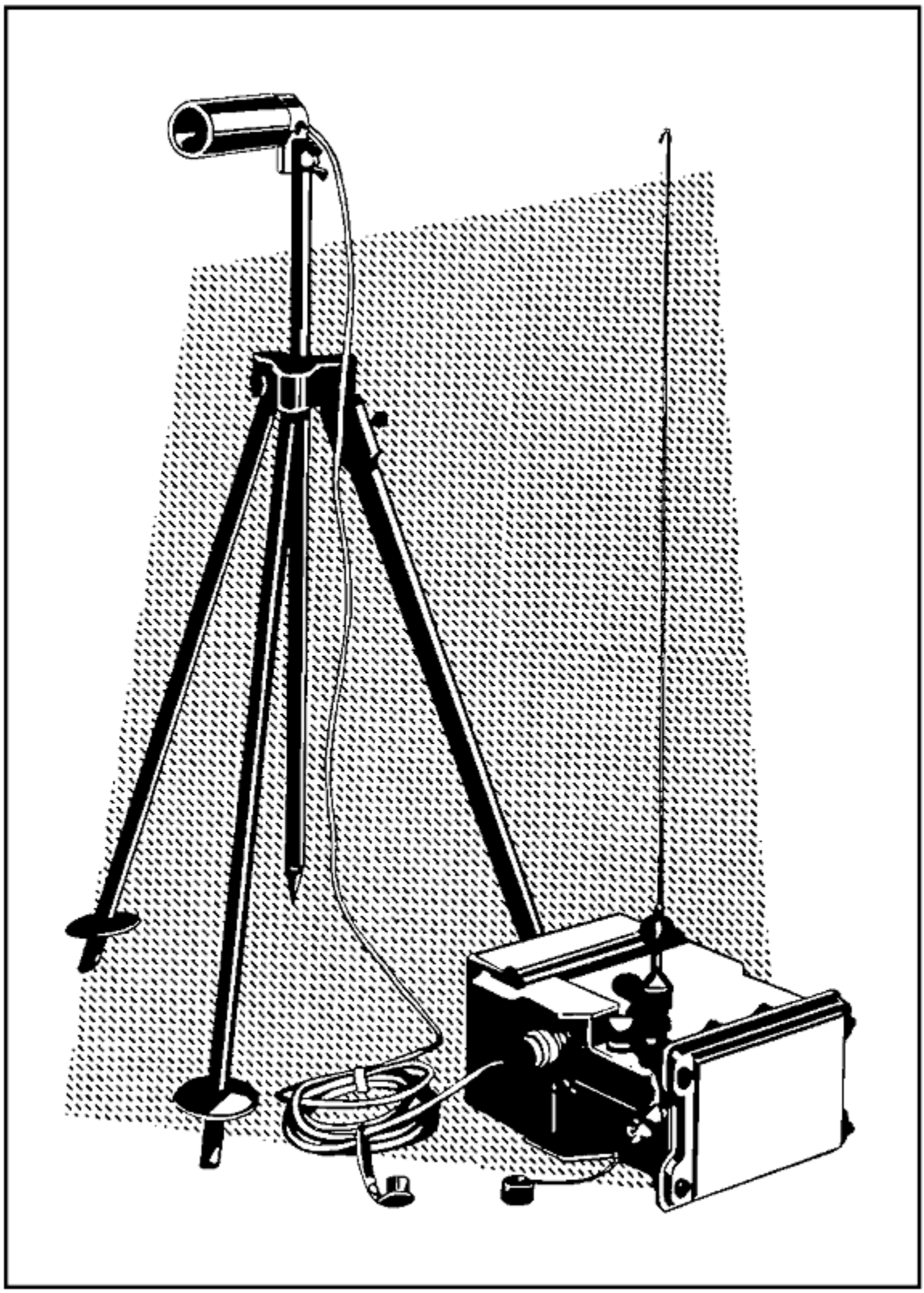

Figure 2-3. Infrared Passive Sensor DT-565/GSQ.

PART B. - RADIO REPEATER RT-1175/GSQ (See Figure 2-4)

The radio repeater (commonly called the repeater) relays sensor transmissions to the monitoring site. This is often necessary because REMBASS transmissions require RLOS. As many repeaters as necessary may be used to accomplish this. The repeater operates by receiving REMBASS transmissions on one channel and then transmitting them on another channel. This provides system flexibility to operate over and around terrain features which would block RLOS. The repeater has only one ID code, which is 64. This ID code is reserved solely for repeaters. The repeater will send a message of 64 over 1 every 84 minutes to verify the repeater is still operational. A message of 64 over 8 will be sent when the repeater receives electromagnetic interference. The repeater is capable of being operated on an airborne platform to extend the range to 100 KM.

GENERAL TECHNICAL CHARACTERISTICS

Weight:	Repeater with 6 batteries 18 kilograms (40 pounds)
ID codes (each channel):	1 per channel (64)
Transmitter power output:	2 Watts nominal
Antenna type:	Radial- omnidirectional
Frequency range:	138-153 megahertz (MHz)
Channel spacing:	25 kilohertz (KHz) apart
Number of channels:	599 (593 usable) excluding 208, 211, 267, 342, 345, 354
Power source:	Primary- Battery BA-5590/U Alternate- PP-8080/GSQ (power supply)
Transmission range:	Ground to ground - 15 KM Ground to air - 100 KM
Battery life:	16,000 activations a day for 30 days (with six batteries)
Reference:	TM 11-5820-872-12

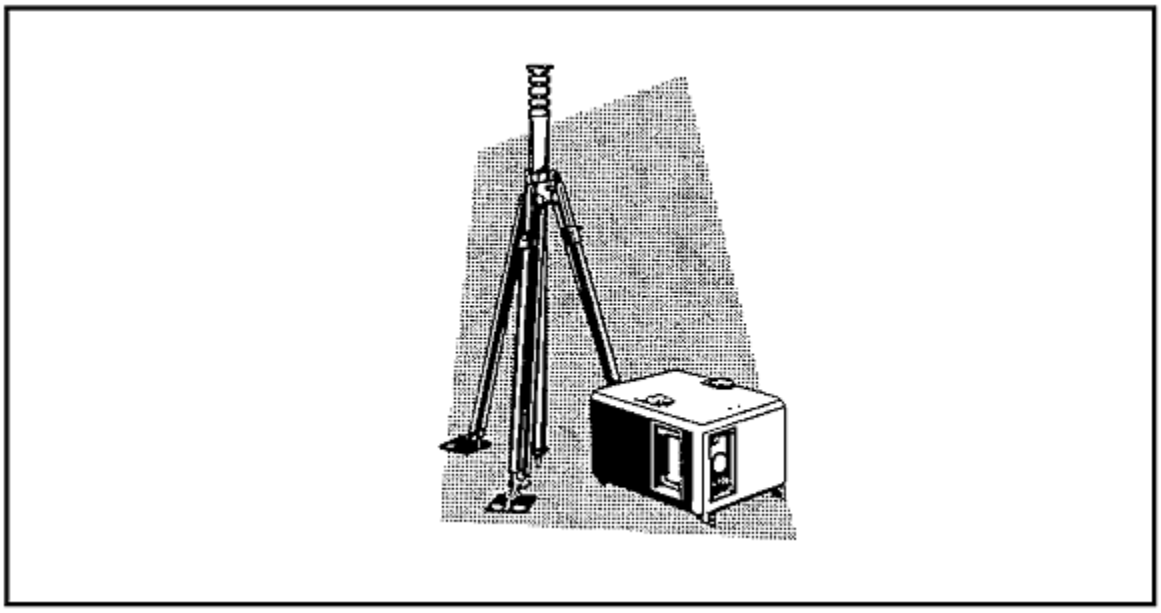

Figure 2-4. Radio Repeater RT-1175/GSQ.

PART C. - CODE PROGRAMMER C-10434/GSQ (See Figure 2-5)

The code programmer is used to program system parameters into the sensors and repeaters. The operator uses it to program into the equipment the ID code(s), mission life, mode (arm or test), channel, and gain (SA sensor only). It also conditions the batteries in the equipment. The code programmer receives its power from the equipment being programmed. The sensors and repeaters cannot be used without first being programmed.

GENERAL TECHNICAL CHARACTERISTICS

Weight:	1.1 Kilogram (2.5 pounds)
Number of channels:	599 (593 usable) excluding 208, 211, 267, 342, 345, 354
Power source:	The code programmer receives its power from the power source of the equipment being programmed
Reference:	TM 11-6350-288-12

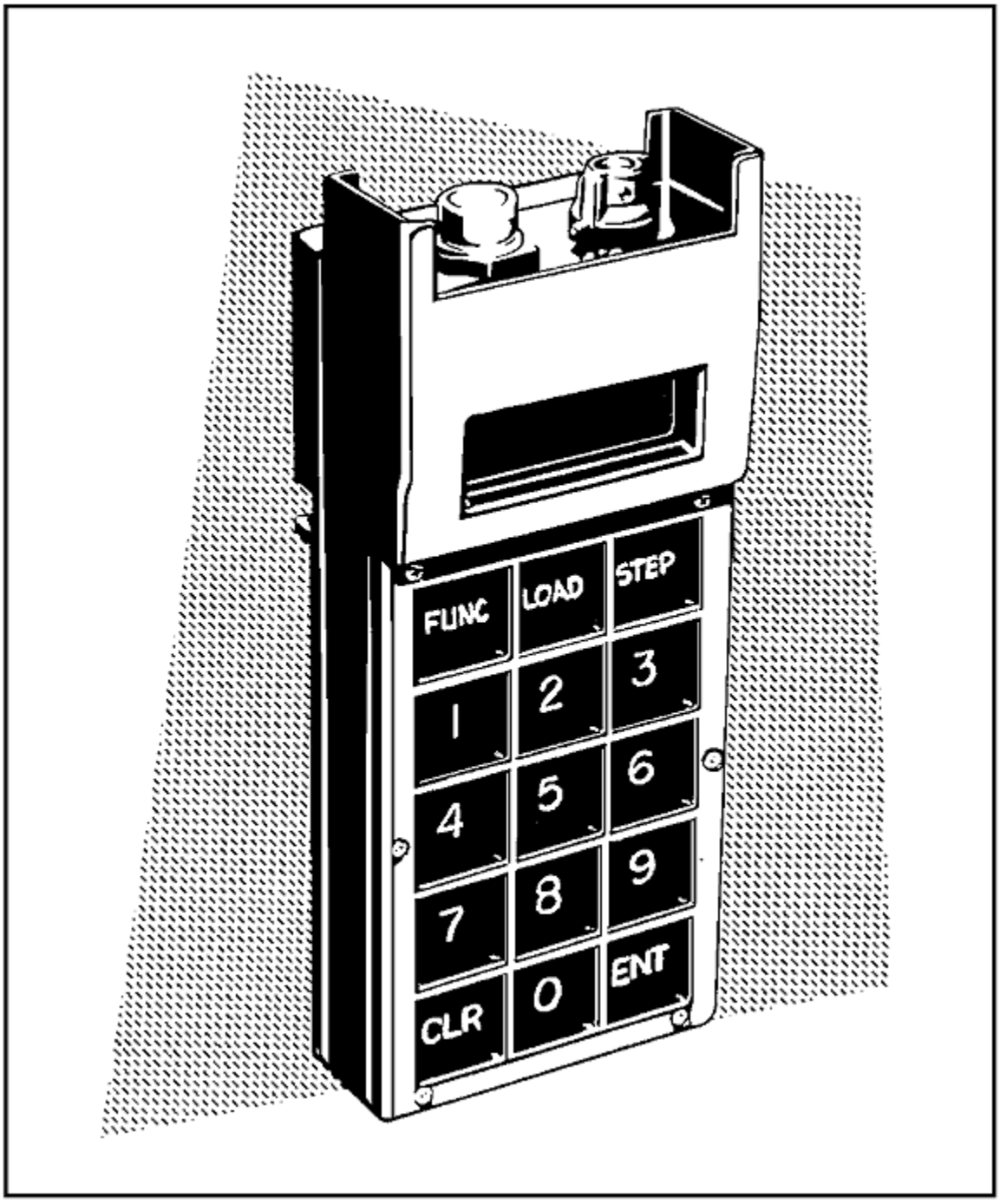

Figure 2-5. Code Programmer C-10434/GSQ.

PART D. - ANTENNA GROUP OE-239/GSQ (See Figure 2-6)

The antenna group is used to receive transmissions from sensors and repeaters. It has a radio frequency (RF) amplifier to provide the SMS with adequate signal strength to receive transmissions from extended ranges. The antenna group is normally used when the SMS cannot receive all sensors and repeaters with the blade antenna, or when at the monitoring site for an extended period. The RF amplifier is powered by a battery in the antenna coupler. A total of four SMSs may be connected to one antenna by using the antenna coupler.

GENERAL TECHNICAL CHARACTERISTICS

Weight:	Antenna group - 20 kilograms (44 pounds) Cable - 12.5 kilograms (27.6 pounds)
Antenna type:	Omnidirectional Collinear Array, 50 ohms impedance
Frequency range:	138-153 megahertz (MHz)
Channel spacing:	25 kilohertz (KHz) apart
Antenna coupler:	RF input and four RF outputs
Power source:	Battery BA-5590/U
Battery life:	15 hours minimum
Reference:	TM 11-5820-867-12

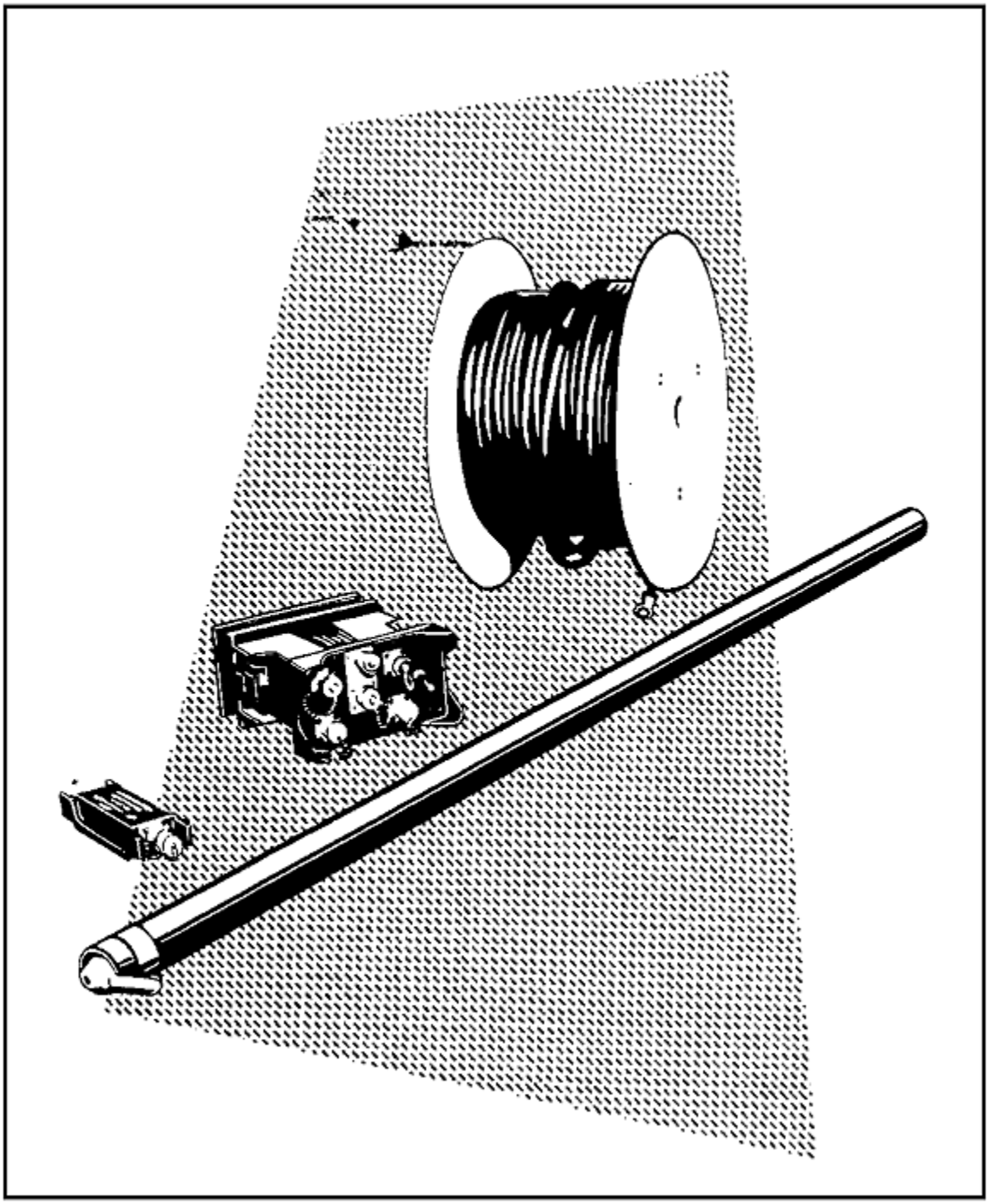

Figure 2-6. Antenna Group OE-239/GSQ.

PART E. - RADIO FREQUENCY MONITOR R-2016/GSQ (See Figure 2-7)

The radio frequency monitor is a portable monitoring set (commonly called PMS). It is a single channel receiver used to receive REMBASS transmissions. It has ten temporary visual displays (TVDs) to display REMBASS activations. The PMS will display the ID code and a detect or classification (SA sensor only) from the sensor. Each TVD will remain on for six seconds after receiving an activation. The PMS has an adjustable audio alarm to alert the operator of an activation. The primary use of the PMS is for verification of REMBASS sensor and repeater operations during the initial implant. It may also be used as an alternate monitor if the SMS becomes inoperative.

GENERAL TECHNICAL CHARACTERISTICS

Weight:	PMS with battery 2.96 kilograms (6.52 pounds)
Number of channels:	599 (593 usable) excluding 208, 211, 267, 342, 345, 354
ID codes (each channel):	64 per channel
Sensor signal readout:	TVD, audio alarm
Frequency range:	138-153 MHz
Channel spacing:	25 KHz apart
Power source:	Battery BA-5598/U
Battery life:	168 hours of continuous operation
Reference:	TM 11-5820-870-12

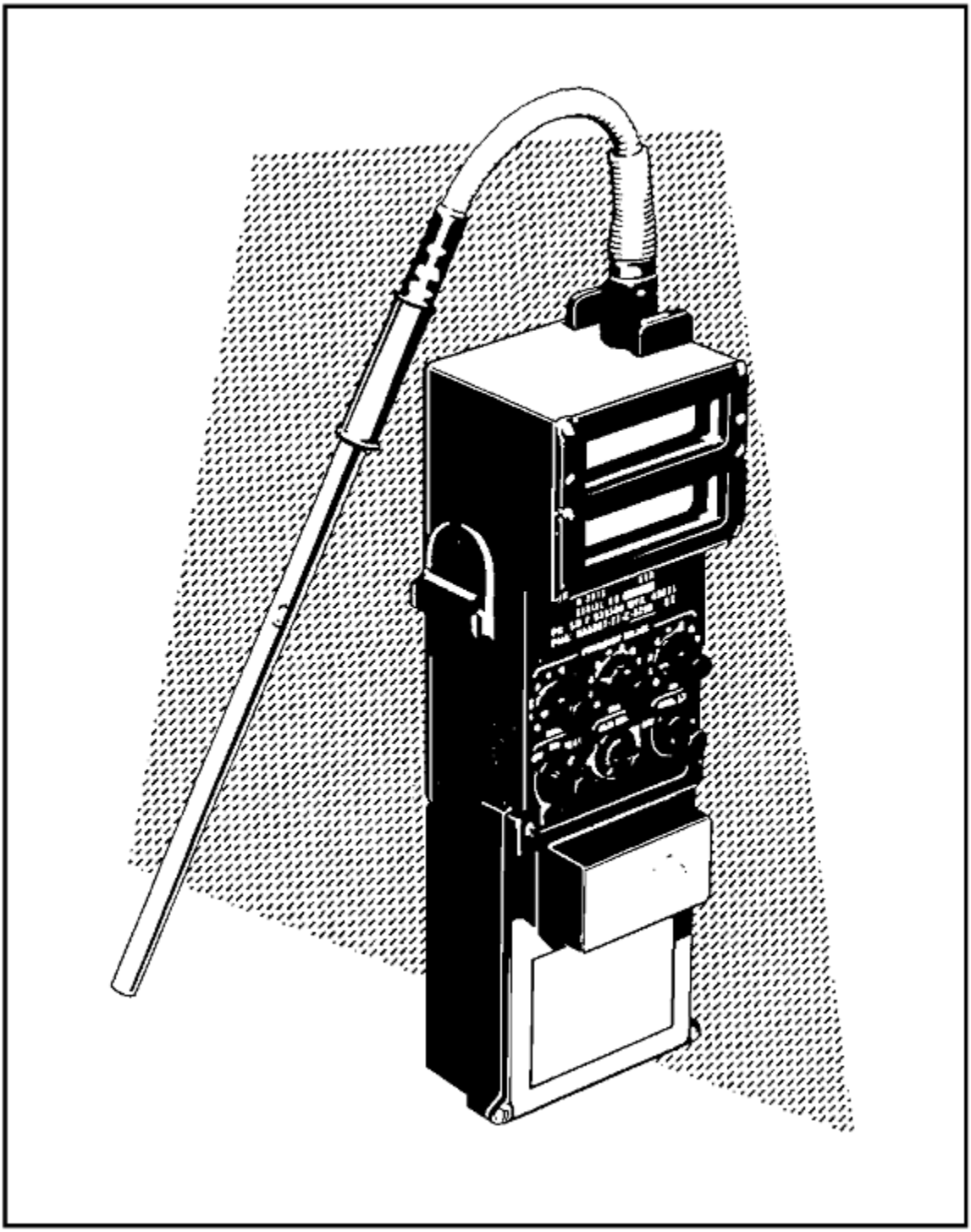

Figure 2-7. Radio Frequency Monitor R-2016/GSQ.

PART F. - SENSOR MONITORING SET AN/GSQ-187 (See Figure 2-8)

The sensor monitoring set (SMS) is the primary monitoring device for the REMBASS system. It has two single channel receivers capable of receiving from both channels simultaneously. It displays activations on TVDs and a hard copy (printer paper). There are ten TVDs, each one will display an activation for six seconds. The printer paper has 60 columns (called PENS). Each PEN is dedicated to a specific sensor or repeater ID. Up to a maximum of 60 IDs may be programmed into the SMS. The printer provides a hard copy of activations and classifications (P, V, W, T). The SMS can be used with its own blade antenna or the antenna group OE-239. The keypad is used to program and test the SMS.

GENERAL TECHNICAL CHARACTERISTICS

Weight:	SMS with two batteries 20 kilograms (44 pounds) SMS with power supply PP-8080 23 kilograms (51 pounds)
Number of channels:	599 (593 usable) excluding 208, 211, 267, 342, 345, 354
ID codes (each channel):	64 per channel
Sensor signal readout:	TVD, audio alarm, and printer
Frequency range:	138-153 MHz
Frequency spacing:	25 KHz apart
Power source:	Primary - BA-5590/U (two each) Alternate - PP-8080/GSQ power supply
Battery life:	15 hour minimum
Printer:	Thermal printing, 60 column (PENS), two speed: Low 15 inches per hour, High 30 inches per hour.
Reference:	TM 11-5820-867-12

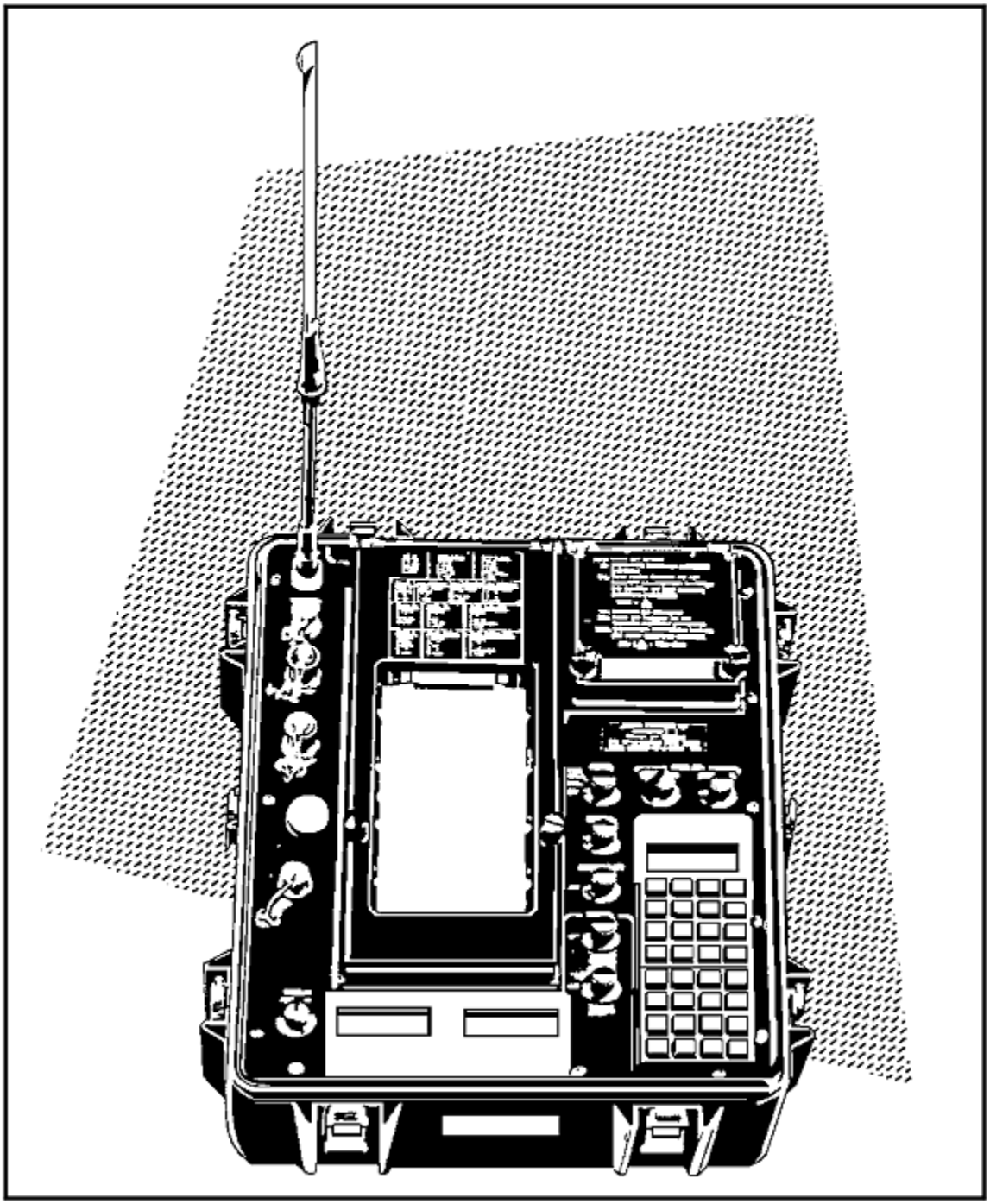

Figure 2-8. Sensor Monitoring Set AN/GSQ-187.

PART G. - POWER SUPPLY PP-8080/GSQ (See Figure 2-9)

The power supply can be used as a power source for the repeater and SMS in place of batteries. It can be connected to a 115 or 220 volt alternate current (AC) outlet or a 24 volt direct current (DC) source. The PP-8080/GSQ coverts the 115 or 220 volt AC or 24 volt DC power to the 12 volts DC needed to power the SMS and repeater. The power supply helps conserve batteries when the SMS is located in a TOC and it is connected to a power source inside the TOC.

GENERAL TECHNICAL CHARACTERISTICS

Weight:	3.7 kilograms (8.1 pounds)
Reference:	TM 11-6130-460-13

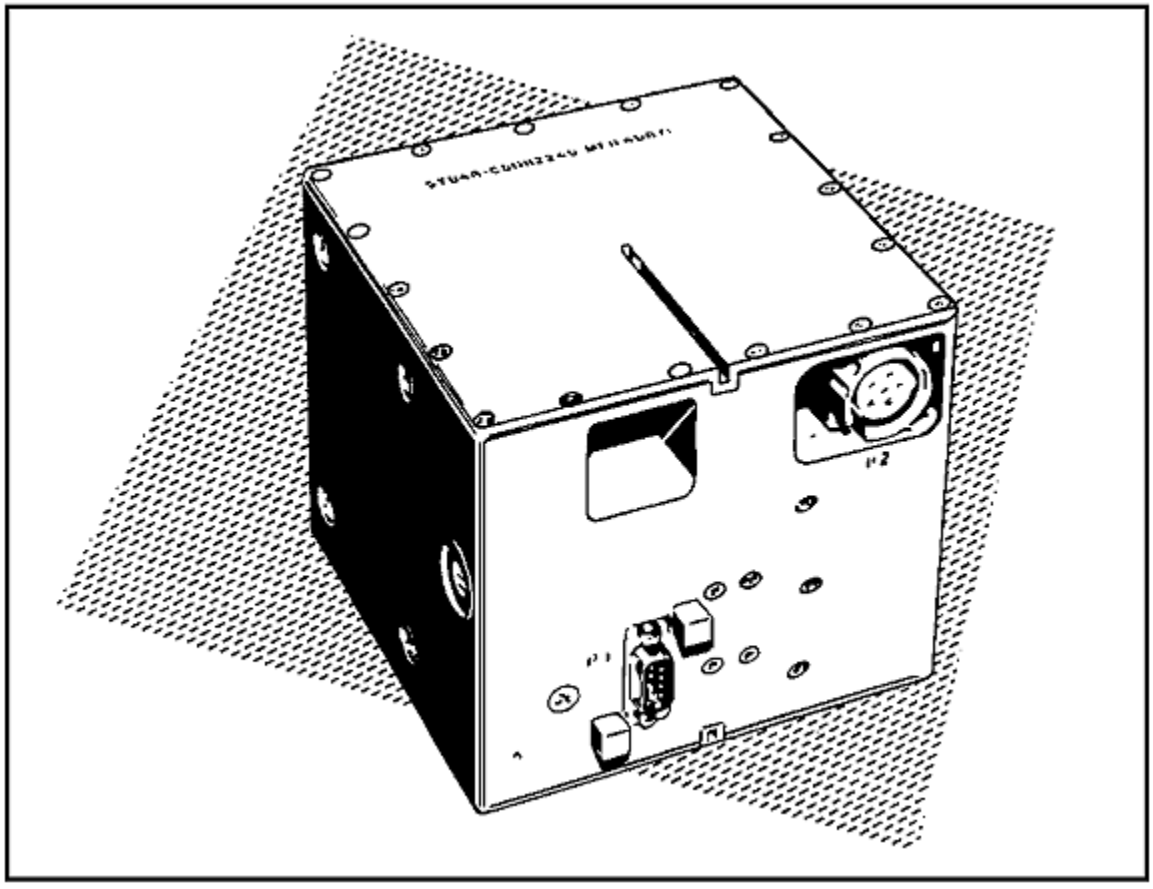

Figure 2-9. Power Supply PP-8080/GSQ.

Lesson 2

Practice Exercise

Instructions The following items will test your understanding of the material covered in this lesson. There is only one correct answer for each item. When you have completed the exercise, check your answers with the answer key that follows. If you answer any item incorrectly, review that part of the lesson which contains the portion involved.

SITUATION: You will describe the characteristics and functions of the different pieces of REMBASS equipment.

1. The MAG is a count indicator for what type of target?

   - ○ A. Personnel.
   - ○ B. Vehicles.
   - ○ C. Both personnel and vehicles.
   - ○ D. It is not used as a count indicator.

2. The repeater informs the operator that it is operational by sending a message of what?

   - ○ A. "-" (detect).
   - ○ B. A message is only sent if the repeater encounters interference.
   - ○ C. 64 over 8.
   - ○ D. 64 over 1.

3. The OE-239 RF amplifier is powered by what?

   - ○ A. The antenna coupler battery.
   - ○ B. The SMS battery.
   - ○ C. The PP-8080.
   - ○ D. One BA-3030.

4. The PMS displays activations on what?

   - ○ A. The printer.
   - ○ B. The TVD.
   - ○ C. Both printer and TVD.
   - ○ D. The PMS only has an audio alarm.

Practice Exercise
Answer Key and Feedback

SITUATION: You will describe the characteristics and functions of the different pieces of REMBASS equipment.

1. The MAG is a count indicator for what type of target?

   A. Personnel.

   B. Vehicles.

   C. Both personnel and vehicles.

   D. It is not used as a count indicator.

2. The repeater informs the operator that it is operational by sending a message of what?

   A. "-" (detect).

   B. A message is only sent if the repeater encounters interference.

   C. 64 over 8.

   D. 64 over 1.

3. The OE-239 RF amplifier is powered by what?

   A. The antenna coupler battery.

   B. The SMS battery.

   C. The PP-8080.

   D. One BA-3030.

4. The PMS displays activations on what?

   A. The printer.

   B. The TVD.

   C. Both printer and TVD.

   D. The PMS only has an audio alarm.

Appendix: Acronym

AC	Alternate Current
ACR	Armored Calvary Regiment
CM&D	Collection Management and Dissemination
COMSEC	Communication Security
DC	Direct Current
DF	Direction Finding
DS	Direct Support
FDC	Fire Direction Center
GS	Ground Support
GSS	Ground Surveillance System
ID	Identification
I&S	Intelligence & Surveillance
IP	Infrared Passive
IPB	Intelligence Preparation of the Battlefield
KHz	Kilohertz
LOC	Length of Column
MACOM	Mason Command
MAG	Magnetic
MHz	Megahertz
Ml	Military Intelligence
MOUNT	Military Operations on Urban Terrain
NCO	Noncommissioned Officer
PMS	Portable Monitoring Set
REMBASS	Remotely Monitored Battlefield Sensor System
RF	Radio Frequency
RLOS	Radio Line of Sight

RSTA	Reconnaissance, Surveillance, and Target Acquisition
SA	Seismic Acoustic
SMS	Sensor Monitoring Set
TSO	Tactical Surveillance Officer
TVD	Temporary Visual Display